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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DONALD D. FOSTER and JEFFREY P. STARK

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Appeal 2008-1947  
Application 10/620,043  
Technology Center 3700

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Decided: November 13, 2008

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*Before:* JENNIFER D. BAHR, LINDA E. HORNER, and  
JOHN C. KERINS, *Administrative Patent Judges.*

BAHR, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Donald D. Foster and Jeffrey P. Stark (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 26, 33-36, and 39-49. The Examiner has objected to claims 27-32, 37, 38, and 50 as depending from a rejected claim, but has indicated them as otherwise

allowable. No other claims are pending in the application. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

*The Invention*

Appellants' claimed invention is directed to a hand held and hand operated liquid dispenser (Specification 1:22-23). Independent claims 26, 36, and 43 are reproduced below.

26. A manually operated liquid dispenser comprising:

a pump chamber having an interior volume and a cylindrical wall surrounding the interior volume, the pump chamber cylindrical wall having a center axis;

a dispenser housing having an interior volume containing the pump chamber cylindrical wall, the dispenser housing having a top wall and a pair of side walls that surround the pump chamber cylindrical wall with the entire pump chamber cylindrical wall being spaced inwardly and separated from each of the dispenser housing top wall and side walls;

a pump plunger mounted to the dispenser housing for axially reciprocating movement of the pump plunger relative to the pump chamber, the pump plunger having a liquid discharge passage that communicates with the pump chamber interior volume.

36. A manually operated liquid dispenser comprising:

a pump chamber having an interior volume and a cylindrical wall surrounding the interior volume, the pump chamber cylindrical wall having a center axis;

a dispenser housing having walls surrounding an interior volume containing the pump chamber;

a pump plunger mounted to the dispenser housing for axially reciprocating movement of the pump plunger relative to the pump chamber, the pump plunger having a center tube with a liquid discharge passage extending through the center tube and communicating with the interior volume of the pump chamber, and the pump plunger having a top wall and a pair of side walls that surround the center tube with the entire center tube being spaced inwardly and separated from each of the pump plunger top wall and side walls.

43. A manually operated liquid dispenser comprising:

a pump chamber having an interior volume and a cylindrical wall surrounding the interior volume, the pump chamber cylindrical wall having a center axis;

a dispenser housing having walls surrounding an interior volume containing the pump chamber;

a pump plunger mounted to the dispenser housing for axially reciprocating movement of the pump plunger relative to the pump chamber, the pump plunger having a liquid discharge passage that communicates with the pump chamber interior volume; and,

a flexible, resilient bulb connecting the pump plunger to the pump chamber cylindrical wall and enclosing the pump chamber interior volume, the bulb having an integral tubular output valve and an integral tubular input valve.

*The Rejection*

Appellants seek review of the Examiner's rejection of claims 26, 33-36, and 39-49 under 35 U.S.C. § 102(b) as anticipated by Micallef (US 4,138,039, issued Feb. 6, 1979).

ISSUES

Appellants argue that Micallef lacks a number of features required by the claims and thus does not anticipate the claimed subject matter. In particular, at issue in this appeal is whether Appellants demonstrate that Micallef lacks:

- (1) a pump chamber having a "cylindrical wall," as required by each of independent claims 26, 36, and 43;
- (2) a flexible, resilient bulb connecting the center tube to the pump chamber cylindrical wall, as required by claim 33, or connecting the pump plunger to the pump chamber cylindrical wall, as required by claim 43;
- (3) a tubular input valve integrally formed with the bulb, as required by claim 35;
- (4) the pump plunger having a top wall and a pair of side walls that surround the center tube with the entire center tube spaced inwardly and separated from each of the pump plunger top and side walls, as required by claim 36;
- (5) the pump plunger having a top wall and a pair of side walls that surround the bulb, as required by claim 49;

- (6) the pump chamber cylindrical wall having an input port and a bulb tubular input valve overlaying the input port, as required by claim 44; and
- (7) the bulb having an integral vent valve, as required by claims 47 and 48.

#### FACTS PERTINENT TO THE ISSUES

- FF1 Appellants' pump chamber 14 has an interior volume surrounded by cylindrical walls 26, rear wall 32, and resilient bulb 120 (Specification 10:4-6, 15:3-9; fig. 6).
- FF2 Appellants' resilient bulb 120 has a spherical portion, a cylindrical wall section 124, and a bulb tubular section 128 (Specification 15:7-8, 15:17-19).
- FF3 Appellants' pump chamber rear wall 32 includes a generally partial spherical portion (fig. 6).
- FF4 Micallef's dispensing pump comprises a pump chamber 18 having an interior volume defined by base 22, which includes a cylindrical wall portion and a hemispherical wall portion, and by flexible and elastomeric diaphragm 24 (col. 2, ll. 37, 42-47, and 52-53; fig. 3).
- FF5 The cylindrical portion of Micallef's base 22 is coaxial with plunger passage 20, through which material in the pump chamber is discharged (col. 2, ll. 35-38; col. 3, ll. 11-12; fig. 3).
- FF6 Micallef's flexible and elastomeric diaphragm 24 is a flexible and resilient bulb.

- FF7 Micallef's diaphragm 24 has peripheral portions in fluid tight engagement with the associated peripheral portions of base 22 (col. 2, ll. 52-55).
- FF8 Micallef's diaphragm 24 is connected to plunger 16, and stem extension 42 coupled to plunger 16, by engagement of the double conical surfaces of boss 28 of diaphragm 24 with associated surfaces of plunger 16 (col. 2, ll. 65-68; col. 3, ll. 39-40; fig. 3).
- FF9 Micallef's diaphragm 24 therefore connects the plunger 16 and stem extension 42 to the pump chamber cylindrical wall (base 22).
- FF10 The top portion of Micallef's plunger 16 and stem extension 42 both have a center tube having plunger passage 20 extending therethrough (col. 2, ll. 35-38; col. 3, ll. 10-12; fig. 3). Thus, either plunger 16 or stem extension 42 alone, or the combination of the two, satisfies the claim limitation of a center tube.
- FF11 Micallef's diaphragm 24 has an integrally formed valve, in the form of a tubular or annular bead (unnumbered) that seats against the lower surface of transverse partition 38 in the at rest position (fig. 3) and becomes unseated from the partition in the dispensing position (fig. 5) to permit ambient air to enter the container 12 via air network 31 to replace the volume of the material to be dispensed (col. 2, l. 68 to col. 3, l. 2). Micallef thus teaches the bulb (diaphragm 24) having an integral vent valve.
- FF12 Micallef's pump chamber 18 includes an input valve (check valve 26), which seats on the top of the narrowed tubular bottom portion of base 22 (figs. 3 and 5; col. 2, ll. 47-52).

- FF13 While the valve seat (the top of the narrowed tubular bottom portion of base 22) for Micallef's check valve 26 is connected to, and thus integral with, diaphragm 24, check valve 26, which functions as the input valve, is not integrally formed with diaphragm 24 (figs. 3 and 5).
- FF14 Micallef's pump chamber includes an input port in the bottom narrowed tubular portion of base 22 (figs. 3 and 5).
- FF15 Micallef's check valve 26 overlays, or covers, the input port in the bottom narrowed tubular portion of base 22.
- FF16 Micallef's check valve 26 is a ball, not an integral tubular input valve (figs. 3 and 5).
- FF17 The cover 50 and side walls of Micallef's cap 32 support the pump plunger 16 for axially reciprocating movement of the plunger 16 relative to the pump chamber 18, but do not reciprocate axially with the plunger 16, and thus are not part of the plunger (col. 3, ll. 53-54; col. 4, ll. 22-35; fig. 3).
- FF18 Micallef's stem extension 42 is coupled to plunger 16 and does not appear to be spaced and separated from the upper tubular portion of plunger 16 (col. 3, ll. 39-40; fig. 3).
- FF19 Micallef's stem extension 42 does not surround the diaphragm 24.
- FF20 Micallef's plunger 16 does not have a top wall and a pair of side walls that surround the center tube thereof, with the entire center tube being spaced inwardly and separated from each of the top wall and side walls.
- FF21 Micallef's plunger 16 does not have a top wall and a pair of side walls that surround the bulb (diaphragm 24).



## PRINCIPLES OF LAW

Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention. *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984). In other words, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *Scripps Clinic & Research Found. v. Genentech Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). It is not necessary that the reference teach what the subject application teaches, but only that the claim read on something disclosed in the reference, i.e., that all of the limitations in the claim be found in or fully met by the reference. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 772 (Fed. Cir. 1983).

## ANALYSIS

### *Claims 26 and 34*

Appellants argue that Micallef does not anticipate the subject matter of claim 26 because Micallef's pump chamber 18 does not have an interior volume surrounded by a "cylindrical" wall. Appellants reason that, together, Micallef's diaphragm 24 and base 22 define a sphere (Appeal Br. 8). Appellants' argument overlooks that Micallef's base 22 also includes a cylindrical wall portion integrally formed with and extending downwardly from the hemispherical portion thereof and that the interior volume of the pump chamber 18 also includes the volume surrounded by this cylindrical wall portion (FF4). We appreciate that Micallef's pump chamber interior volume is defined by, or surrounded by, walls having a variety of shapes,

including cylindrical and non-cylindrical. In this regard, Micallef's pump chamber is very similar to Appellants' pump chamber interior volume, which is defined or surrounded by cylindrical walls 26, rear walls 32, and resilient bulb 120 (FF1 through FF3). That the walls of Micallef's pump chamber include non-cylindrical, as well as cylindrical, wall portions does not detract from the fact that Micallef's pump chamber has an interior volume and a cylindrical wall surrounding the interior volume.

In light of the above, Appellants' argument does not persuade us that the Examiner's rejection of claim 26 as anticipated by Micallef is in error.

Appellants' argument that Micallef does not disclose any cylindrical wall that is coaxial with the discharge passage as recited in claim 34 (Appeal Br. 9) appears to be grounded on Appellants' position that Micallef's base 22 does not comprise a cylindrical wall surrounding the interior volume of the pump chamber 18, and thus likewise is not persuasive of error in the Examiner's rejection of claim 34. Figure 3 of Micallef clearly illustrates the coaxial relationship of plunger passage 20 and the cylindrical wall of base 22 (FF5).

#### *Claims 33 and 43*

Appellants argue that the Examiner's rejection does not identify in Micallef "a flexible, resilient bulb connecting the center tube [or pump plunger] to the pump chamber cylindrical wall" as called for in claims 33 and 43 (Appeal Br. 9 and 12). We do not agree with Appellants. As noted in our findings above (FF6 through FF10), we find that Micallef's diaphragm 24 is a flexible, resilient bulb connecting the plunger 16 and stem extension 42 to the base 22, which comprises a cylindrical wall. Appellants'

argument thus fails to persuade us the Examiner erred in rejecting claims 33 and 43 as anticipated by Micallef.

*Claim 35*

We understand Appellants' argument in the first paragraph on page 10 of their Appeal Brief and on page 2 of the Reply Brief to be that Micallef lacks a tubular input valve integrally formed with the bulb, as called for in claim 35. We agree with Appellants that check valve 26, not diaphragm 24, functions as the input valve (Appeal Br. 10). As noted in our findings above, while the valve seat (the top of the narrowed tubular bottom portion of base 22) for Micallef's check valve 26 is connected to, and thus integral with, diaphragm 24, check valve 26, which functions as the input valve, is not integrally formed with diaphragm 24 (FF12, FF13). Appellants thus persuade us the Examiner erred in rejecting claim 35 as anticipated by Micallef.

*Claims 36, 39-42, and 49*

Appellants argue that Micallef does not teach a pump plunger having a top wall and a pair of side walls that surround the center tube with the entire center tube being spaced inwardly and separated from each of the pump plunger top wall and side walls, as called for in claim 36 (Appeal Br. 10; Reply Br. 1). Appellants point out that the cylindrical housing wall 32 relied on by the Examiner as the side walls (Answer 4) is not a part of the pump plunger, but is completely separate from the plunger (Reply Br. 1). We agree with Appellants. As noted in our findings above, the cover 50 and side walls of Micallef's cap 32 support the pump plunger 16 for axially reciprocating movement of the plunger 16 relative to the pump chamber 18, but do not reciprocate axially with the plunger 16, and thus are not part of

the plunger (FF17). Nor do we find any other portions of Micallef's plunger that would satisfy the limitation in claim 36 of a top wall and a pair of side walls that surround the center tube thereof, with the entire center tube being spaced inwardly and separated from each of the top wall and side walls (FF18, FF20).

In light of the above, Appellants persuade us the Examiner erred in rejecting claim 36, and claims 39-42 depending from claim 36, as anticipated by Micallef.

Appellants additionally argue that Micallef lacks the pump plunger having a top wall and a pair of side walls that surround the bulb, as required by claim 49 (Appeal Br. 14). We agree with Appellants. As discussed above, the cover 50 and side walls of Micallef's cap 32 support the pump plunger 16 for axially reciprocating movement of the plunger 16 relative to the pump chamber 18, but do not reciprocate axially with the plunger 16, and thus are not part of the plunger (FF17). Nor do we find any other portions of Micallef's pump plunger that would satisfy the limitation in claim 49 of a top wall and a pair of side walls that surround the bulb (diaphragm 24) (FF19, FF21). Appellants thus persuade us the Examiner erred in rejecting claim 49 as anticipated by Micallef.

*Claims 44-46*

Appellants argue that Micallef does not disclose a tubular input valve overlaying an input port, as required by claim 44 (Appeal Br. 13). We agree with Appellants. Micallef's check valve 26 overlays, or covers, the input port in the bottom narrowed tubular portion of base 22 (FF14, FF15), but Micallef's check valve 26 is a ball, not an integral tubular input valve (FF16). Appellants thus persuade us the Examiner erred in rejecting claim

44, and claims 45 and 46 depending from claim 44, as anticipated by Micallef.

*Claims 47 and 48*

Appellants argue that Micallef lacks a bulb having an integral vent valve, as required by claims 47 and 48 (Appeal Br. 13-14). We do not agree with Appellants. Micallef's diaphragm 24 has an integrally formed valve, in the form of a tubular or annular bead (unnumbered) that seats against the lower surface of transverse partition 38 in the at rest position (fig. 3) and becomes unseated from the partition in the dispensing position (fig. 5) to permit ambient air to enter the container 12 via air network 31 to replace the volume of the material to be dispensed (FF11). Micallef thus teaches the bulb (diaphragm 24) having an integral vent valve (FF11). Appellants thus fail to persuade us of error in the rejection of claims 47 and 48 as anticipated by Micallef.

CONCLUSIONS OF LAW

Appellants fail to demonstrate that Micallef lacks:

- a pump chamber having a "cylindrical wall," as required by each of independent claims 26, 36, and 43;
- a flexible, resilient bulb connecting the center tube to the pump chamber cylindrical wall, as required by claim 33, or connecting the pump plunger to the pump chamber cylindrical wall, as required by claim 43; and
- the bulb having an integral vent valve, as required by claims 47 and 48.

Appellants demonstrate that Micallef lacks:

- a tubular input valve integrally formed with the bulb, as required by claim 35;
- the pump plunger having a top wall and a pair of side walls that surround the center tube with the entire center tube spaced inwardly and separated from each of the pump plunger top and side walls, as required by claim 36;
- the pump plunger having a top wall and a pair of side walls that surround the bulb, as required by claim 49; and
- the pump chamber cylindrical wall having an input port and a bulb tubular input valve overlaying the input port, as required by claim 44.

#### DECISION

The Examiner's decision is affirmed as to claims 26, 33, 34, 43, 47, and 48 and reversed as to claims 35, 36, 39-42, 44-46, and 49.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

#### AFFIRMED-IN-PART

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